

THE MINERAL INDUSTRY OF SENEGAL, THE GAMBIA, AND GUINEA-BISSAU

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Senegal

Production of phosphate rock, fertilizers, and phosphoric acid continued to dominate the mineral industry of Senegal. Minerals accounted for almost 20% of the country's export earnings and approximately 2% of the nation's gross domestic product.

The Government was actively promoting the development of its mineral resources as a viable international investment opportunity (Ministry of Energy, Mines, and Industry, 1995b). Mining legislation in Senegal consisted of the Mining Code, Law No. 88-06, adopted on August 26, 1988. The Petroleum Code was based on Law No. 86-13 of April 14, 1986, with a revision in 1988. The Investment Code, Law No. 87-25 of July 30, 1987, augmented the existing mining legislation. The Government was an equity partner in most current production operations.

An unreported amount of gold, estimated by the Government at 550 kilograms per year, was produced in Senegal by artisanal miners. Development of the Sabodala gold prospect again was delayed. The dispute between Australia's Paget Mining Ltd. and La Source Compagnie Minière over their joint-venture equity interest in the Société Minière de Sabodola (SMS) operating company persisted. Negotiations concerning the development of Sabodola between the joint venture partners, the Government, and Eeximore Afrique of Senegal continued during the year. During 1995, the Government had awarded a permit to Eeximore to develop the surface oxides of SMS' concession. By July 1996, Paget had completed and submitted a development feasibility study. However, during the negotiations, Canarc Resources Corp. of Canada announced that it had been appointed by Eeximore to manage the construction of an open pit mine and carbon-in-leach processing plant at Sabodola (The Northern Miner, 1996).

The Government had approved a number of gold exploration permits. Ashanti Exploration Ltd., a subsidiary of Ashanti Goldfields Corp. (Ghana) Ltd. drilled, mapped, sampled soil and termite mounds, and trenched on the Bambadji prospect to earn interest in the prospect from AGEM Ltd., a subsidiary of International African Mining Gold Corp. of Canada. Leo Shield Exploration NL of Australia obtained an option to acquire interest in the Samborobougou concession. Paget was pursuing an exploration license for the Sounkounkou prospect on the Mako permit. Randgold Resources Ltd., a subsidiary of Randgold & Exploration Ltd. of South Africa, was working on

the Souroumdou project. SAMAX Resources Ltd., a subsidiary of SAMAX Gold Inc. of Canada, mapped, sampled, and trenched the Daloto and Toundifara prospects. Secor GeoMin Mining Development Corp., a subsidiary of NovaGold Resources Inc. of Canada, completed a geochemical study of the Bounsankoba project. Anmercosa Mining (West Africa) Ltd., a subsidiary of Anglo American Corp. of South Africa, was engaged in transporting mining equipment from the Dakar entrepôt.

Compagnie Sénégalaise des Phosphates de Taïba (CSPT), which mined calcium phosphate 100 kilometers (km) north east of Dakar, was merged with Industries Chimiques du Sénégal (ICS) during 1996. ICS produced sulfuric acid and phosphoric acid at its Darou Khoudoss fertilizer complex. Société Sénégalaise des Phosphates des Thiès, operating in an area southwest of CSPT, produced aluminum phosphate, attapulgit, and calcium phosphate. (*See table 1.*)

The Government had identified additional deposits of phosphate rock at Matam in northeastern Senegal. However, these deposits, with estimated reserves of 40 million metric tons (Mt), were expected to remain unexploited under current phosphate market conditions. Other mineral resources identified by the Government included clays, copper, diamond, the Tamna Lake diatomite, the Faleme iron ore, peat, silica sands, dimension stone in the southeast, titanium-bearing sands along the coast, and uranium (Ministry of Energy, Mines, and Industry, 1995a).

Tullow Oil Plc. of Ireland and La Société des Pétroles du Sénégal (Petrosen) produced natural gas from the Diam Nadio East Field on the Sebikotane block. The gas was used to power a 20-megawatt turbine at the Cap de Biches power station in Dakar. The joint venture continued exploration of the Sebikotane block during 1996. Petrosen was drilling for gas on the Thiés offshore block. Pecten International Co. of the United States also had exploration rights for an area offshore Senegal.

The Gambia

The Gambian economy was dominated by agriculture and tourism; there was no significant mineral industry. The Government reported production of 174,012 cubic meters of silica sand in 1996. Clays for bricks, laterite, sand and gravel, and cockle shells were exploited for domestic construction needs. Other identified mineral resources in The Gambia

included glass sand deposits and titaniferous sands.

Guinea-Bissau

After years of small-scale mining activity sustained by domestic demand for construction materials such as laterite and sand, the mineral industry of Guinea-Bissau was swept up in the regional West African exploration frenzy. During 1996, the Ministry of Energy, Industry, and Natural Resources was negotiating exploration concessions for bauxite, gold, and phosphate with American and Canadian companies.

Bauxite had been discovered in the Boé region, approximately 150 km east of Bissau, by N.V. Billiton Maatschappij of the Netherlands during the late 1950's. The U.S.S.R. had studied the deposits in the 1970's and inferred a reserve base of 500 Mt of bauxite with an average grade of 47% Al_2O_3 and 5% SiO_2 . The United Nations Development Programme had begun investigations of the Farim phosphate deposit, approximately 75 km northeast of Bissau, in 1978. The Bureau de Recherches Géologiques et Minières of France studied the deposit from 1981-85, and estimated a resource of 95 Mt averaging 30% P_2O_5 and 30% moisture. Mining was regulated by the 1990 Mining Code. Petroleum operations were governed by the 1982 Petroleum law.

In the minerals fuels sector, Monument Oil and Gas Plc. of the United Kingdom (38.75%), Sociedad Internacional Petrolera S.A. of Chile (38.75%), and the state company Empresa Nacional de Pesquisa e Exploracao de Guinea Bissau (22.5%) were working on offshore Block 3.

Development of the bauxite and phosphate deposits had been hampered in the past by the lack of suitable transportation

infrastructure. The Government was interested in constructing a deep water terminal on Sao Joao Bay to handle the proposed bauxite exports. The Government was also pursuing the development of an 18-MW-capacity hydroelectric plant at Saltinhoto that would almost double the country's existing 20-MW production capacity.

References Cited

- Ministry of Energy, Mines, and Industry, 1995a, Mineral Resources Development Investment Opportunities: Ministry of Energy, Mines, and Industry, 35 p.
———1995b, Mining Resources in Senegal: Ministry of Energy, Mines, and Industry, Direction des Mines et de la Géologie, 65 p.
The Northern Miner, 1996, Canarc to construct plant in East Senegal: March 11, p. A1.

Major Sources of Information

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TABLE 1
 SENEGAL: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity 2/		1992	1993	1994	1995	1996
Cement, hydraulic	metric tons	601,071 3/	589,820 3/	590,000	590,000	590,000
Clays, fuller's earth (attapulgitic)	do.	112,336 3/	119,000 3/	119,000	120,000	120,000
Gold	kilograms	500	550	550	550	600
Petroleum:						
Natural gas	thousand cubic meters	110,000	110,000	110,000	110,000	110,000
Crude oil	thousand 42-gallon barrels	4	4	2	2	2
Refinery products	do.	4,700	6,200	6,200	2,500	2,500
Phosphate rock and related products:						
Calcium phosphate-based fertilizers		169 3/	160 3/	160	160	160
Crude rock:						
Aluminum phosphate 4/		75	29	29	40	40
Calcium phosphate		2,284 3/	1,667 3/	1,587 3/	1,500	1,800
Phosphoric acid		288 3/	274 3/	274	274	300
Salt	metric tons	110,000 3/	117,400 3/	117,000	120,000	120,000

1/ Includes data available through Apr. 15, 1997.

2/ In addition to the commodities listed, Senegal produced clays, sand and gravel, and stone for local construction purposes, and limestone for cement. Information is inadequate to make reliable estimates of output levels.

3/ Reported.

4/ Estimated data, based on aluminum phosphate clinker numbers reported by U.S. State Department, follows, in metric tons: 1992--54,000; 1993--21,000.